Absolute Value

What do remember about absolute value? Can you come up w/ an example?

$|x|$

$|-5| = 5$

$|5| = 5$

Ex: $|2y-4| = 12$

$2y-4 = 12$ or $2y-4 = -12$

$y = 8$ ✓ or $y = -4$ ✓

① $|15-3x|=6$ ② $|2x+5|=3x+4$

$15-3x=6$ or $15-3x=-6$

$-15 \quad -15 \quad -15 \quad -15$

$-3x=-9$ $\quad -3x=-21$

$\frac{-3x}{-3}=\frac{-9}{-3}$ $\quad \frac{-3x}{-3}=\frac{-21}{-3}$

$x=3$ $\quad x=7$

$15-3(3)=6$

$15-9=6$

$6=6$

$15-3(7)=-6$

$15-21=-6$

$-6=-6$

$-8 \quad 1$

$+15 \quad +5$

$7 \quad 6$

(2) $|2x+5| = 3x+4$

$2x+5 = 3x+4$

$-5 \quad -5$

$2x = 3x - 1$

$-3x \quad -3x$

$\frac{-1x}{-1} = \frac{-1}{-1}$

$x = 1$

$2(1)+5 = 3(1)+4$

$2+5 = 3+4$

$7 = 7$ ✓

$2x+5 = -1(3x+4)$

$2x+5 = -3x-4$

$-5 \quad -5$

$2x = -3x - 9$

$+3x \quad +3x$

$\frac{5x}{5} = \frac{-9}{5}$

$x = -1.8$

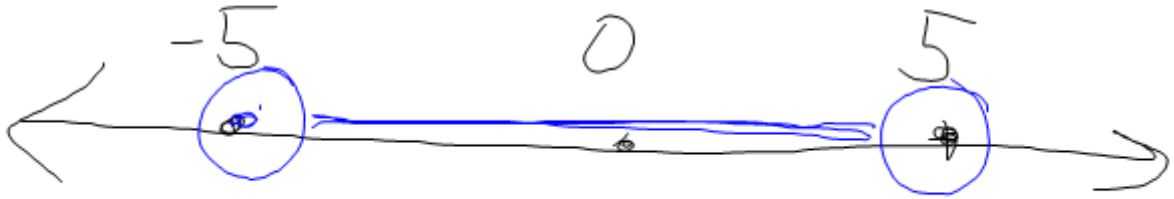
$2(-1.8)+5 = 3(-1.8)+4$

$-1.4 = 1.4$

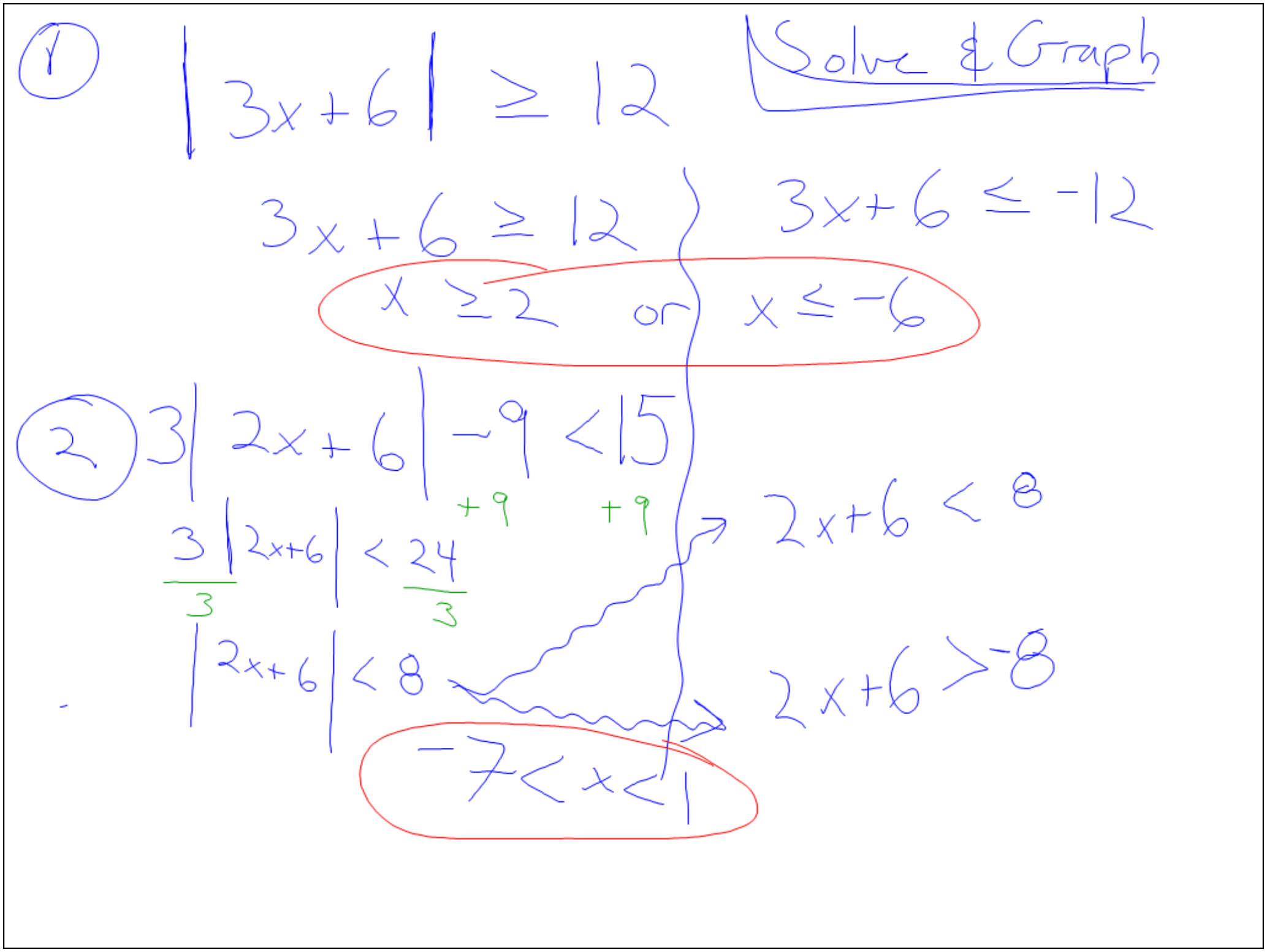
extraneous

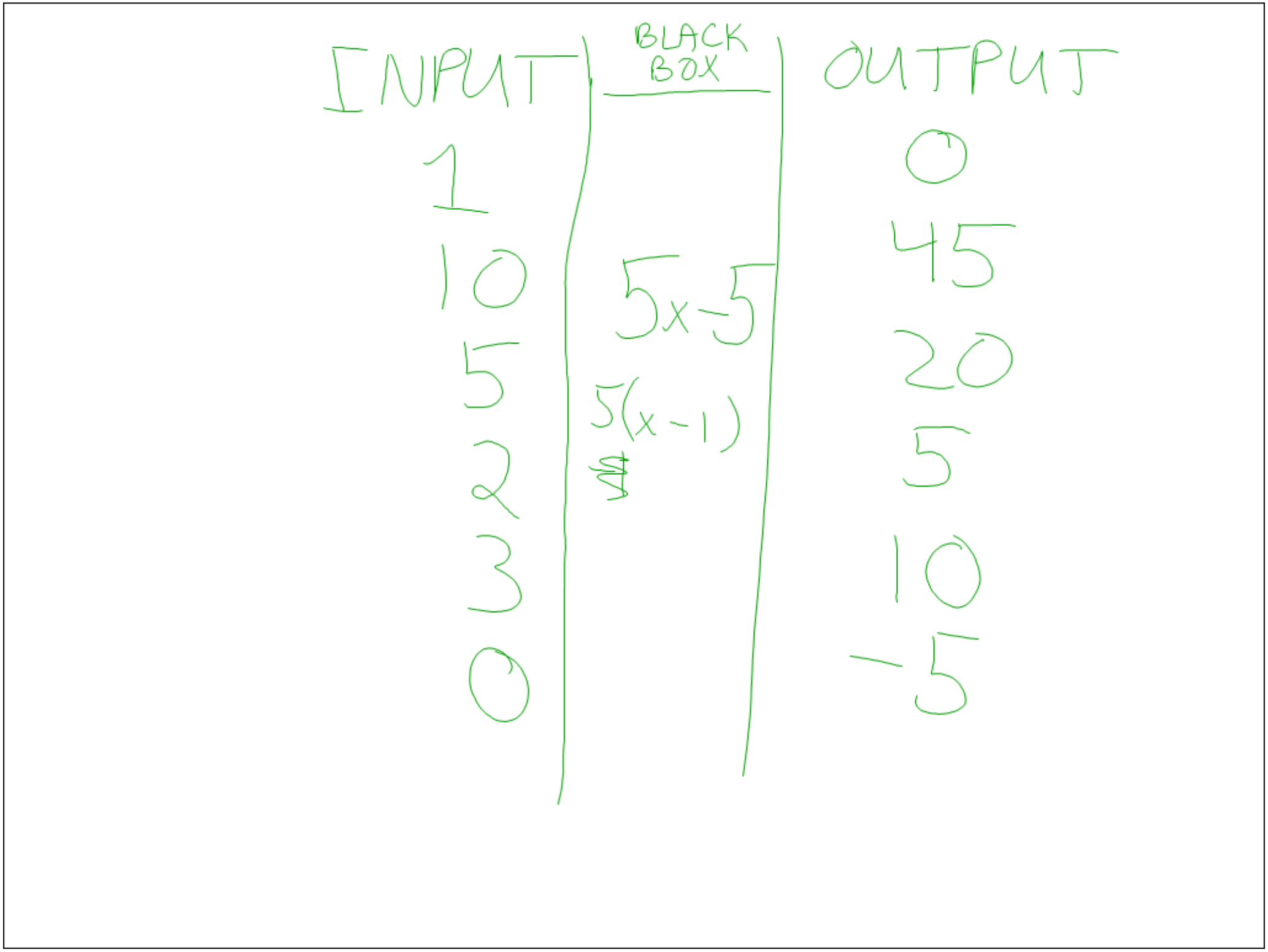
$|x| \geq 5$

$|x| < 5$



$4 < 5$


1
|3x+6| ≥ 12
Solve & Graph
3x+6 ≥ 12
3x+6 ≤ -12
x ≥ 2 or x ≤ -6
2
3|2x+6|-9 < 15
+9 +9
3|2x+6| < 24
3 3
|2x+6| < 8
2x+6 < 8
2x+6 > -8
-7 < x < 1


INPUT
BLACK BOX
OUTPUT
1
10
5
2
3
0
5x-5
5(x-1)
0
45
20
5
10
-5

HW: 1.5, p.36

(1-5, 10-12,

19, 25, 26)

Due: Tues.